ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

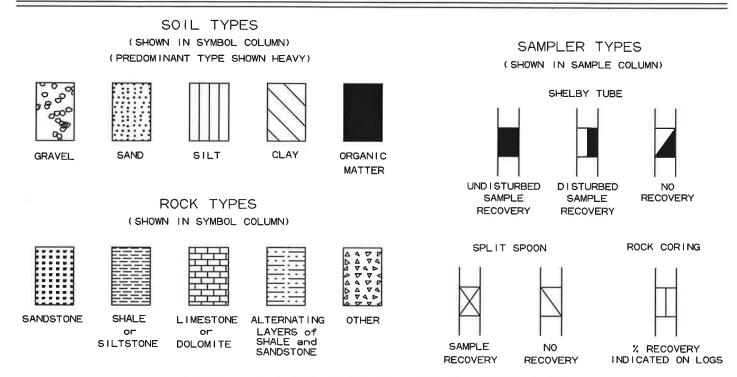


SUBSURFACE INVESTIGATION

STATE JOB NO		090501	
FEDERAL AID PROJE	CT NO. <u>ER-00</u>	51(18) & ER-0051(19)	
	HWY. 7 SLIDE	E REPAIR (NEWTON CO.)	(S)
STATE HIGHWAY	7	SECTION	18
IN		NEWTON	COUNTY

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

LEGEND



TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANL	JLAR SOIL		CLAY	CL/	AY-SHALE	8	SHALE
*N" Value	Density	"N" Value	Consistency	"N" Value	Consistency	*N° Value	Consistency
0-4	Very Loose	0-1	Very Soft	0-1	Very Soft		
5-10	Loose	2-4	Soft	2-4	Soft	31-60	Soft
11-30	Medium Dense	5-8	Medium Stiff	5-8	Medium Stiff	Over 60	
31-50	Dense	9-15	Stiff	9-15	Stiff	More than	2'
0ver 50	Very Dense	16-30	Very Stiff	16-30	Very Stiff	Penetratio	on
		31-60	Hard	31-60	Hard	in 60 Blow	vs: Medium Hard
		Over 60	Very Hard	0ver 60	Very Hard	Less than	2'
						Penetratio	on
						in 60 Blow	/s: Hard

- 1. Ground water elevations indicated on boring logs represent ground water elevations at date or time shown on boring log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
- 2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
- 3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test – Driving a 2.0" O.D., 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6 inches of penetration on the drill log. The field "N" Value (N_f) can be obtained by

adding the bottom two numbers for example: $\frac{6}{8-9} \Rightarrow 8+9=17 blows/ft$. The "N" Value corrected to 60% efficiency (N₆₀) can be obtained by multiplying N_f by the hammer correction factor published on the boring log.

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN			. 4					
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JOB N			090501 (Internal Job # D09193) Newton		DATE:	D 555		-		4, 20			
JOB N	AME:		Hwy 7 Slide - Jasper		TYPE C	r DRI	LLING:	Н		w Ste amor			r -
STAT	IONI-		461+50		EQUIPN	A LENTT				Æ 85		,10	
LOCA			25' Left of Centerline		EQUIP	ACIVI:			CIV	лг 03	,0		
			David Allen		НАММ	FR CC	RRECT	ION F	таст	ΩR+	1	.23	
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Р	Y M	М	DESCRIPTION OF MATERIAL	COL				<u> </u>	FT.	WS		%	%
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FT.	L	E S	SUIDEACE ELEVATION: 1714 1		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
		-	SURFACE ELEVATION: 1714.1			%	11 I	Ω	T	Z	<u></u>	4	
			Maried Office Pressure Olive										
<u> </u>			Moist, Stiff, Brown Clay										
	60												
	60	X								3-4-9			
5	//	\triangle	Moist, Stiff, Gray Clay with Gravel (Shale							4-	9		
	1		Fragments)										
	10		1 raginoma)										
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	155	∇								10			
10	<i>H</i>	\triangle								23-2	27		
	14		SHALE - Highly Weathered, Soft, Gray								- 1		
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	14												
	11									11			
15	11	X	SHALE - Highly Weathered, Medium Hard, Gray							29-3			
15	11												
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-	12	Н										52	0
	14												
⊢ .⊣	\mathbb{Z}		SHALE - Highly Weathered, Soft, Occasional									T	
20	11/		Fractures, Gray		1								
<u> </u>	14										h	od	0
\vdash	1/2												
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	777										-	+	-
25	滋		SHALE MUTH EDECHIENT CANDOTONIS										
			SHALE WITH FREQUENT SANDSTONE PARTINGS AND SEAMS - Weathered, Medium								ļ	ام	30
			Hard, Gray								1	υų	JU
		+	Boring Terminated		-					_	-	+	
30			bonng reminated										
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35													
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			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE	3 NC		1					
JOB NO			090501 (Internal Job # D09193) Newton		DATE:				st 2	5, 201	5	_	-
JOB N			Hwy 7 Slide - Jasper		TYPE OF	DRI		_	ollo	w Ste	m A		r-
STATI	ON:		462+32		EQUIPM	ENT:				amon Æ 85		ore	
LOCA			22' Left of Centerline										
LOGG	ED B	Y: [David Allen		НАММЕ	R CO	RRECT	ION F	ACT	OR:	1	.23	
COMI	PLET	IOI'	N DEPTH: 29.3	_									
D E P T H	S Y M B O .	SAMPLE	DESCRIPTION OF MATERIAL	SOIL GROU	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
FT,	니	S	SURFACE ELEVATION: 1708.4		PLA	N %		DR.	LBS	NO.	PER		
	740		Asphalt								\neg		
			Dry, Medium Dense, Gray Sandy Gravel (Base)										
			Moist, Stiff, Brown Clay										
10		X	SHALE - Highly Weathered, Soft, Brown and Gray							11 20-2	3		
15	#	X	SHALE - Highly Weathered, Medium Hard, Gray							20 60			
			SHALE - Highly Weathered, Soft, Gray	i.						(5"	')	98	0
20			SHALE - Highly Weathered, Medium Hard with Soft Layers, Gray										66
25			SHALE WITH FREQUENT SANDSTONE									IOU	00
			SEAMS AND LAYERS - Weathered, Medium Hard					٠				96	52
30 	A DIVISION OF THE PROPERTY OF	·	Boring Terminated										
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JOB N			090501 (Internal Job # D09193) Newton		DATE		<u> </u>			ust 2	25, 20)1		\neg
JOB N			Hwy 7 Slide - Jasper				ORII	LLING:	_		w St		luge	r-
										Di	amo	nd C	ore	
STATI	ON:		463+45		EQUI	PME	NT:			CN	Æ 8	50		
LOCA			21' Left of Centerline											
			David Allen		HAM	MER	CO	RRECT	ION I	FACT	OR:		1.23	_
	PLEI		N DEPTH: 23.5		_	_								_
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-	Y	м	DESCRIPTION OF MATERIAL						Н	FT.	WS		%	%
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FT.	L		SURFACE ELEVATION: 1700.2		PLASTIC	[]	% MOIST.	LIQUID LIMIT)RY	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN		
	0 0 0 0		Asphalt		╫	_	0,					_		
			Dry, Dense, Gray Sandy Gravel (Base)											
		0												
	//		Moist, Brown Clay						j					
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	///	X									15-			
	///					1								
	111		SHALE - Highly Weathered, Soft, Gray											
	11													
10	177		SHALE - Highly Weathered, Medium Hard, Gray	-							1	7		
	///	\uparrow									6	0		
	///		SHALE WITH FREQUENT SANDSTONE SEAMS - Highly Weathered, Medium Hard with								(4		100	٥
L _	///		Soft Layers, Gray											Ĭ
	177													-
15	12		SHALE WITH EDECHENT SANDSTONE											
	12		SHALE WITH FREQUENT SANDSTONE SEAMS - Highly Weathered, Soft with Medium										96	10
_	17		Hard Layers, Gray											
	14													
	77													
20	///		SHALE WITH FREQUENT SANDSTONE											
	11		SEAMS - Highly Weathered, Medium Hard with										10d	76
= +	11		Soft Layers, Gray											
<u> </u>	12													
<u> </u>			Boring Terminated											
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30														
- 50														
- 7														
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JOB N			090501 (Internal Job # D09193) Newton			TE:				st 20	6, 10	15		
JOB N			Hwy 7 Slide - Jasper				DRI	LLING:	-	ollo	w Ste	em A		er -
STAT	ION:		464+98		FO.	UIPMI	ENT:				amoi 1E 8:		ore	
LOCA			21' Left of Centerline		٢٧					01.				
			David Allen		НА	MMEI	R CO	RRECT	ION F	ACT	OR:		1.23	
COM	PLET	OI	N DEPTH: 23.9						,					
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	3: p (Dry, Dense, Gray Sandy Gravel (Base)											
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			Weathered Shale)											
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	17		SHALE - Highly Weathered, Soft, Gray											
	11		Of Wile - Frighty Weathered, Ook, Oray											
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10	///	X	SHALE - Highly Weathered, Medium Hard, Gray								18			
	11		SHALE WITH OCCASIONAL SANDSTONE		1						60 (4			
	11		PARTINGS - Highly Weathered, Medium Hard								ν.		88	0
	12		with Soft Layers, Gray		1									Ĭ
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15					1									
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			SHALE WITH OCCASIONAL SANDSTONE		1									
		4	PARTINGS - Highly Weathered, Medium Hard,		-									
20			Occasional Fractures, Gray											
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25			Boring Terminated											
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REMA	ARKS	š:								-				

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			DIVISION - GEOTECHNICAL SEC.		PAG		1		2	na1	. 1 . 2	015	_	
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STAT	ION:		461+48		EOT	IPME	NIT.				Æ 8:		J1 •	
LOCA			18' Right of Centerline		EQU.	TEIVIE	INI:			CIV	ш о.	50		
			David Allen		HAM	/MFR	CO	RRECT	ION I	FACT	ΏR.		1.23	
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15			SHALE - Highly Weathered, Medium Hard, Gray								1:	5		
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			CHALE MUTH COCA COLONIAL CANDOTONIE											
	11		SHALE WITH OCCASSIONAL SANDSTONE										100	ا ۸
	11		LAYERS - Highly Weathered, Soft to Medium Hard, Gray										100	0
	11		Tiald, Gray											
35	111													
REMA	ARKS	 3:												

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JOB N			090501 (Internal Job # D09193) Newton		DATE:			eptem	her	1. 2	015		
JOB N			Hwy 7 Slide - Jasper		TYPE OF	F DRI			llo	w Sto	em A		er -
STAT	ION:		461+48		EQUIPM	ENT:				Æ 8:			
LOCA			18' Right of Centerline										
			David Allen N DEPTH: 44.5		HAMME	R CO	RRECT	ION FA	ACT	OR:	_	1.23	-
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FT.	Ľ	E S	SURFACE ELEVATION: 1713.6		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
78			SURFACE ELEVATION. 1713.0			%	ココ	Ω	7	z	<u> P</u>	_	
												100	16
			SHALE WITH OCCASIONAL SANDSTONE										
40			SEAMS AND LAYERS - Weathered, Medium Hard, Gray										
			Tiard, Gray										
												100	57
45	-2-2	_	Boring Terminated						-				_
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-			DIVISION - GEOTECHNICAL SEC.		PA	_	_1	OF					_	
JOB N			090501 (Internal Job # D09193) Newton		DA'				-		2, 2		·	
JOB N	IAME:		Hwy 7 Slide - Jasper		TYI	PE OF	DRI	LLING:	Н		w Ste			er -
STAT	ION:		464+97		EOI	UIPMI	DAITE.				Æ 8:		orc	
LOCA			20' Right of Centerline		EQ	UIPIVI	ENI:			CN	TE O.	50		
			David Allen		HAI	MMFI	R CO	RRECT	ION I	FACT	OR.		1.23	
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FT.	L	s	SURFACE ELEVATION: 1688.9			PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
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	1		Moist, Very Stiff, Gray Clay with Gravel (Shale Fragments)		1									
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	11		SHALE WITH OCCASIONAL SANDSTONE											
	11		LAYERS - Highly Weathered, Soft, Gray										76	0
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	17		SHALE - Highly Weathered, Soft, Gray										10d	0
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25														
			SHALE WITH OCCASIONAL SANDSTONE											
			SEAMS - Weathered to Slightly Weathered,										92	62
			Medium Hard, Occasional Fractures, Dark Gray											J
30			Boring Terminated		+	_							\dashv	
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35														
REMA	ARKS	3:	-										!	
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ARKANSAS HWY. & TRANS. DEPARTMENT			RINC								
MATERIALS DIVISION - GEOTECHNICAL SEC.		PAC		1	OF		1	14.0	2015		
JOB NO. 090501 (Internal Job # D09193) Newton		DAT				-		14, 2			
JOB NAME: Hwy 7 Slide - Jasper		TYP	PE OF	DRI	LLING:	H		w Ste			r -
(T) 4 (T) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A										OIC	
STATION: 464+97		EQU	JIPMI	ENT:			CN	Æ 8:	50		
LOCATION: 46' Right of Centerline LOGGED BY: David Allen		,,,,	AMEI	2 00	DDECT	TONI I	EACT	OD.		1.23	
COMPLETION DEPTH: 34		HAN	MME	K CU	RRECT	ION	FACI	OK:		1.23	_
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P Y M						_	H.	NS		%	%
T M DESCRIPTION OF WATERIAL	SOIL					H	CŪ.	9		T	R
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		[5	FLASI IC LIMIT	% MOIST	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	``	_
FT, S SURFACE ELEVATION: 1690		<u> </u>	7 1	1%	125	DR	LB	NO NO	PE		
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Moist, Soft, Brown Clay with Gravel											
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Moist, Soft, Brown Clay											
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SHALE - Highly Weathered, Very Soft, Brown											
and Gray											
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SHALE - Highly Weathered, Medium Hard, Brown	j							32-	-		
and Gray								02	Ų.		
SHALE WITH OCCASIONAL CLAY LAYERS -											_
Highly Weathered, Soft, Occasional Fractures,										82	0
20 Brown and Gray	1										
SHALE WITH OCCASIONAL SANDSTONE LAYERS - Highly Weathered, Medium Hard with										100	0
Soft Layers, Occasional Fractures, Dark Gray										'"	U
	-										
25											
SHALE WITH OCCASIONAL SANDSTONE											
LAYERS - Weathered, Medium Hard, Occasional										10d	36
Fractures,Dark Gray											
- 10 A A A A A A A A A A A A A A A A A A											
30											
SHALE WITH OCCASIONAL SANDSTONE										10d	64
LAYERS - Weathered, Medium Hard, Dark Gray											
35 Boring Terminated		\top								\vdash	
REMARKS:	1									ш	_

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STAT	ION:		463+99		EO	UIPM	ENT:				Æ 8			
LOCA			46' Right of Centerline			011 111				01.				
			David Allen		НА	MME	R CO	RRECT	ION	FACT	OR:		1.23	
COM	PLET	(IOI	N DEPTH: 35.1											
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P T	м	М	DESCRIPTION OF MATERIAL	SOIL					H	U.F	W C		% T	% R
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''	0	Ē			- [3	PLASTIC LIMIT	% MOIST		DRY WEIGHT	LBS PER CU.FT	OF	PER 6-IN.	R	D
FT.	L		SURFACE ELEVATION: 1694.3			PLAST LIMIT	% N	LIQUID	DR	LBS	NO. OF BLOWS	PER		
	111				7									
	111													
	11				- 1									
	11				- 1									
	111		SHALE - Highly Weathered, Very Soft, Brown		- 1									
	111	X	and Gray								6-	3		
		\sim									0-	9		
_														
10	///				- 1									
-10	///	X			- 1						24			
		\triangle									21-	-30		
	11		SHALE - Highly Weathered, Soft, Brown and Gray		- 1									
	11		Olay		- 1									
 15	11/													
-10		X										4		
		\triangle	SHALE - Highly Weathered, Medium Hard, Brown								34-	-50		
			and Gray											
	14	-	SHALE WITH OCCASIONAL SANDSTONE										-	-
20	111		LAYERS - Highly Weathered, Medium Hard with										10d	0
	11		∖Soft Layers, Brown and Gray		-									
	11		SHALE - Highly Weathered, Medium Hard with											
	11		Soft Layers, Brown and Gray										96	34
	11		• /											٠.
25	177													
			'											
			SHALE - Weathered, Medium Hard, Occasional											
			Fractures, Dark Gray										98	78
														. 5
30														
	*: 747V	\top												
_ =			SANDSTONE WITH FREQUENT SHALE											
			SEAMS AND LAYERS - Weathered, Cemented,										100	56
			Occasional Fractures, Gray										. 50	55
 35														
REM	ARKS	 3:	· · · · · · · · · · · · · · · · · · ·										_	_

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE	G NC		2				
JOB N			090501 (Internal Job # D09193) Newton		DATE:			ptembe	r 15, 1	2015		
JOB N	AME		Hwy 7 Slide - Jasper		TYPE OI	FDRI	LLING:		ow St Diamo			er -
STATI	ON:		463+99		EQUIPM	ENT:			лато ME 8		Ore	
LOCA	TION	:	46' Right of Centerline									
J			David Allen		HAMME	R CO	RRECT	TION FAC	TOR:		1.23	
D		s	N DEPTH: 35.1						T			
ΙEΙ	S Y	Α									0/	07
P T	М	M P	DESCRIPTION OF MATERIAL	SOIL				THE	0		% T	% R
н	ВО	L		GROU	LIC	JIST.		WEIG)F BI	N.	C R	Q D
FT.	Ĺ	E S	SURFACE ELEVATION: 1694.3		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
1	*****		Boring Terminated		+	0.			=			
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70 REMA	\ DIZ											_
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			DIVISION - GEOTECHNICAL SEC.		PAGE	1		7 1					
JOB N			090501 (Internal Job # D09193) Newton		DATE:			pten					
JOB N	IAME:		Hwy 7 Slide - Jasper		TYPE	OF DR	ILLING	· I	tollo	ow St	em.	Aug	er
STAT	ION:		463+44		EQUIP	MENT	:		CM	⁄IE 8:	50		
LOCA			46' Right of Centerline										
		_	David Allen		HAMN	IER CO	DRRECT	TION I	FACT	OR:		1.23	_
D		-	N DEPTH: 34		Т	T	1						-
D E P T H	S Y M B O	SAMPLE	DESCRIPTION OF MATERIAL	SOIL GROU	PLASTIC	MOIST.	T.	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
FT.	L	S	SURFACE ELEVATION: 1697.4		LA	W W	LIQUID)RY	BS	Q	ER		
5		X	Moist, Stiff, Brown and Gray Clay with Gravel (Shale Fragments)							5-	8		
15		X	SHALE - Highly Weathered, Soft, Brown and Gray							1: 25- 1: 14-	29		
_20	111	\times	SHALE - Highly Weathered, Hard, Gray							19			
			SHALE WITH OCCASIONAL SANDSTONE LAYERS AND CONCRETIONS - Weathered, Medium Hard, Brown and Gray							61 (2	")	86	0
25 			SHALE WITH OCCASIONAL CONCRETIONS - Weathered, Medium Hard, Gray									96	74
30			SHALE WITH OCCASIONAL SANDSTONE LAYERS - Weathered, Medium Hard, Occasional Fractures, Gray									100	46
35			Boring Terminated										
REM	ARKS	S:										_	

			HWY. & TRANS. DEPARTMENT					. 10						
	_		DIVISION - GEOTECHNICAL SEC.		PAG		1		2	ما ما	16 /	2015		
JOB N JOB N			090501 (Internal Job # D09193) Newton Hwy 7 Slide - Jasper		DATI		DDI	Se :LLING	_		16, 2 w St			
JOB IV.	IAIVIE:		Tiwy / Slide - Jaspel		IYPI	e or	DKI	LLING			iamo			- 11
STATI	IONI:		462+79		EQUI	IDME	NIT.				Æ8		.010	
LOCA'			46' Right of Centerline		EQUI	IFIVIE	SIN 1 :			CIV	и п . о	50		
			David Allen		НАМ	íMER	: co	RRECT	ION :	FACT	OR:		1.23	
	_	_	N DEPTH: 40.1		1111111	IVILI		ruwe i	1011	17101	OI.		1,23	
D		S	(22)		\neg	Т	_		Г					
E	S	A								30				
P	Y M	М	DESCRIPTION OF MATERIAL						Ŀ	FT.	WS		%	%
Т	W B	Р	DESCRIPTION OF WATERIAL	SOIL GROU	P		r ið		EE EE	CO	2		T C	R Q
Н	l o l	L			^ ≌		ISI	ا ۱	WE	ER)F.E	Z.	Ř	Ď
FT.	L	E S	011DE 4 OF ELEVATION 4704		PLASTIC	LIMIT	"MOIST	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
- T - E	/	<u> </u>	SURFACE ELEVATION: 1701		12		%			<u> </u>	Z	<u> </u>	\vdash	
	14													
	368		Maint Chiff Drawn and Cross Class with Crossal											
			Moist, Stiff, Brown and Gray Clay with Gravel											
	13													
5		$\overline{}$										1		
	1	Х									6	.9		
	18		Moist, Stiff, Brown and Gray Clay with Gravel											
_ =	11		(Shale Fragments)											
	11		, ,											
10	3													
10	14	X									-	4		
	11	\hookrightarrow									21	-31		
			SHALE - Highly Weathered, Soft, Brown and											
	11		Gray											
	12						- N							
15	11										1	9		
	11	\triangle	SHALE - Highly Weathered, Medium Hard, Brown								45	60		
	11		and Gray								(1	0)		
	111													
	1/2		SHALE WITH OCCASIONAL CLAY LAYERS -											
20	1/2		Highly Weathered, Soft, Occasional Fractures,										77	0
	177	+	Brown and Gray											
- $+$	17													
			SHALE WITH OCCASIONAL CLAY LAYERS -										لہا	_
	11		Highly Weathered, Soft with Medium Hard Layers, Occasional Fractures, Brown and Gray										100	0
	11	П	Layers, Occasional Fractures, brown and Gray											
25		\perp						,						
			CHALE MITH OCCASIONAL CANDOTONIC											
	11		SHALE WITH OCCASIONAL SANDSTONE LAYERS - Highly Weathered, Medium Hard,											
	11		Brown and Gray										10d	0
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35			SHALE WITH OCCASIONAL SANDSTONE LAYERS AND CONCRETIONS - Weathered,											

			HWY. & TRANS. DEPARTMENT		BORIN			. 0				
JOB N			DIVISION - GEOTECHNICAL SEC. 090501 (Internal Job # D09193) Newton		PAGE	2		ptembei	. 16 ′	2015		
JOB N			Hwy 7 Slide - Jasper		DATE:	E DDI		ptembei Hollo				r-
JOBIN	ATTIL.		Timy / Clido dasper		IIIL	n Dici	LLIIVO.		iamo			/1
STAT	ION:		462+79		EQUIP	MENT:		CI	ME 8.	50		
LOCA	TION	:	46' Right of Centerline									
LOGG	ED B	Y: [David Allen		HAMM	ER CC	RRECT	ION FAC	ΓOR:		1.23	
COM	PLET	(OI	N DEPTH: 40.1	,			-	,			_	
D	s	S										
E P	Ý	A						E E	S		%	%
T	М	M P	DESCRIPTION OF MATERIAL	SOIL				EHE ST.	NO.		Т	R
H.	В	L		GROU	P 2	IST.	<u>ا</u> ۾	VEI ER (F BI	Ä	C R	Q D
	L	E			PLASTIC	% MOIST.	LIQUID	DRY WEIGHT LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	``	-
FT ₂	_	S	SURFACE ELEVATION: 1701		교	8	33		ž	PE		_
			Medium Hard, Occasional Fractures, Gray									
										Ī	100	48
40												
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REM	ARKS	 S:							L	_	_	

	Y. & TRANS. DEPARTMENT ISION - GEOTECHNICAL SEC.		BORING PAGE	3 NO 1		2				
	501 (Internal Job # D09193) Newton	-	DATE:		Septer		16 a	nd 22	, 201	5
	y 7 Slide - Jasper		TYPE OF				ollo	w Ster	n Aug	ger -
STATION: 462	+25	9	EQUIPM	ENT:				Œ 850		
	Right of Centerline			- 54		57.4				•
	d Allen/Paul Christenberry		HAMME	R CO	RRECT	ION FA	ACT	OR:	1.2	3
COMPLETION DE	3P1H: 43.4		1 - 1						T	Т
D S S A P M P H O E FT. S SUB	DESCRIPTION OF MATERIAL RFACE ELEVATION: 1709.2	SOIL GROUF	PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	RQ
111	NI ACE ELEVATION. 1709.2			-0/	77	Δ	-	7	~ -	
	oist, Soft, Brown, Clay							0 0-3		
Fr	oist, Very Stiff, Brown Clay with Gravel (Shale ragments)							9 11-1	3	
Fr	oist, Hard, Brown Clay with Gravel (Shale ragments)							9 16-1	9	
20 SH	HALE - Highly Weathered, Medium Hard, Gray							17 37-5	7	
									95	0
	HALE WITH CLAY LAYERS - Highly eathered, Soft, Brown and Gray								84	0
30									70	0
35										
REMARKS:										

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.			RINC GE	3 NC). 11 OF	2					
JOB N			090501 (Internal Job # D09193) Newton		DA'				mber 1	6 a	ınd 2	22, 2	015	
JOB N			Hwy 7 Slide - Jasper					_	Ho	llov	w Ste	em A	Auge	
											otary		sh	
STATI			462+25 47' Right of Centerline		EQU	UIPMI	ENT:		(CN.	IE 8:	50		
LOCA LOGG			David Allen/Paul Christenberry		HAI	MMEI	R CO	RRECT	ION FA	СТ	OR:		1.23	
			N DEPTH: 43.4											
D	s	S	-		T									
E P	Υ	A M			1					Ë.	SA		%	%
T	M B	P	DESCRIPTION OF MATERIAL	SOIL	m				GHJ	5	LOV		T C	R
Н	0	L E		GROC	' C		ISI		WE	PER)FB	-IN	R	Q D
FT.	L		SURFACE ELEVATION: 1709.2			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
	111	Т	SHALE - Highly Weathered to Weathered, Soft to		Ť						_		100	_
	11		Medium Hard, Dark Gray										100	0
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	777													
40														
			SHALE - Weathered, Medium Hard, Dark Gray										96	32
		1	Boring Terminated		+	_				+				-
45			Boiling Terminated											
										1				
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65														
70														
REMA	ARKS	8:												

MATERIALS DIVISION - GEOTECHNICAL SEC. JOB NO. 090501 (Internal Job # D09193) Newton JOB NAME: Hwy 7 Slide - Jasper STATION: 461+66 LOCATION: 46' Right of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 43.2 D S A P H M T B L S S S S S A P H M T B L S S S S S S S S S S S S S S S S S S
Diamond Core STATION: 461+66 LOCATION: 46' Right of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 43.2 DESCRIPTION OF MATERIAL H D L S S A P M P L S S S S A P M P L S S S S S S S S S S S S S S S S S S
STATION: 461+66 LOCATION: 46' Right of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 43.2 D S Y A M P M P DESCRIPTION OF MATERIAL T B B L C S S S S S S S S S S S S S S S S S S
LOCATION: 46' Right of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 43.2 D S A A P M M P P DESCRIPTION OF MATERIAL H O L S SURFACE ELEVATION: 1714.2 FT. L S SURFACE ELEVATION: 1714.2 Moist, Stiff, Brown Clay with Gravel (Shale
COMPLETION DEPTH: 43.2 D S A P M M P L L E S SURFACE ELEVATION: 1714.2 Moist, Stiff, Brown Clay with Gravel (Shale Exercises) I.23 I.23 I.23 I.23 I.23 I.23 II.23 III.23 III.23
COMPLETION DEPTH: 43.2 D S S A M P M DESCRIPTION OF MATERIAL GROUP L SOIL GROUP L
E P T M M P L E S SURFACE ELEVATION: 1714.2 Moist, Stiff, Brown Clay with Gravel (Shale Frozmants)
THOLE SURFACE ELEVATION: 1714.2 Moist, Stiff, Brown Clay with Gravel (Shale Moist, Stiff, Brown Clay with Gravel (Shale
T H B C E S SURFACE ELEVATION: 1714.2 Moist, Stiff, Brown Clay with Gravel (Shale Engage) Moist, Stiff, Brown Clay with Gravel (Shale Engage)
Moist, Stiff, Brown Clay with Gravel (Shale
Moist, Stiff, Brown Clay with Gravel (Shale
Moist, Stiff, Brown Clay with Gravel (Shale
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S (Tragmanta)
3 (V) Fragments)
3 (V) Fragments)
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10 10 10 10 10 10 10 10 10 10 10 10 10 1
SHALE - Highly Weathered, Soft, Gray
Grinez - riigiliy vveaticied, cont, cray
15 SHALE - Highly Weathered, Medium Hard, Gray 33-40
- 33-40 STIALL - Flighty Weathered, Medium Flatu, Gray
SHALE WITH CLAY LAVERS Highly
25 SHALE WITH CLAY LAYERS - Highly Weathered, Soft, Brown and Gray
30
REMARKS:

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORIN PAGE	G NC		2					
JOB N			090501 (Internal Job # D09193) Newton		DATE:			ptemb		22, 2	2015		
JOB N			Hwy 7 Slide - Jasper		TYPE O	F DRI		Но	llo	w Ste	em A	Auge	er -
STATI	ION:		461+66		EQUIPM	FNT:				amoi ڮ 8:		ore	
LOCA			46' Right of Centerline		EQUII.	IL:			C1.	IL V.	50		
			Paul Christenberry		HAMMI	ER CC	RRECT	ION FA	ΛСТ	OR:		1.23	
COM	PLET	_	N DEPTH: 43.2		7							_	
D	s	S											
E P	Y	M	DESCRIPTION OF MATERIAL					_	H.	WS		%	%
Т	M B	Р	DESCRIPTION OF MATERIAL	SOIL GROU	$\mathbf{P}_{\mathbf{P}_{\mathbf{r}}}$			IGH	CC	3L0,	ا نــ	T C	R Q
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FT _i	L	S	SURFACE ELEVATION: 1714.2		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
	///	Т	SHALE - Highly Weathered to Weathered, Soft to			Ť						95	34
	14		Medium Hard, Dark Gray										
	11												
	/ / /	\parallel											
40													
			SHALE - Weathered, Medium Hard, Dark Gray									100	80
		Ш											
			Boring Terminated										
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JOB N		_	090501 (Internal Job # D09193) Newton		DATE:				nber	23, 20	015	-	
JOB N			Hwy 7 Slide - Jasper		TYPE O	F DRI		-	[ollo	w Ste	m Au		-
			400 00							amon		e	
STATI			462+32 19' Right of Centerline		EQUIPM	IENT:			CN	Æ 85	0		
			Raymond Taylor		HAMMI	ER CC	RRECT	rion i	FACT	OR:	1.3	23	
			N DEPTH: 44										
D E P T H	S Y M B	S A M P L	DESCRIPTION OF MATERIAL	SOIL GROU	1 🖂	IST.	Q	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	1		% R Q D
FT,	Ľ	E S	SURFACE ELEVATION: 1707.9		PLASTIC LIMIT	"MOIST	LIQUID	DRY V	LBS P	NO. 0	PER 6-IN.		_
			Moist, Stiff, Gravelly Clay										
5		X	Moist, Stiff, Brown Clay							3-5	5		
10		X	Moist, Very Stiff, Gray Clay with Gravel (Shale Fragments)							7	3		
15 		X	SHALE - Highly Weathered, Medium Hard, Gray							38-5			
											9	0	0
			SHALE WITH CLAY LAYERS - Highly Weathered, Soft, Brown and Gray								8	8	0
			Weathered, 30it, Brown and Gray								8	9	0
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 			SHALE WITH OCCASSIONAL SANDSTONE								-	-	
REM	ARK	 S:	I,									_1	_
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			HWY. & TRANS. DEPARTMENT			ING N		_					
			DIVISION - GEOTECHNICAL SEC.		PAGI			2	1	22 2	015		_
JOB N JOB N			090501 (Internal Job # D09193) Newton Hwy 7 Slide - Jasper		DATE		Se :ILLING	ptem					or_
10p 14	Alvii.		riwy / Oilue - Jaspei		lirL	Or DK	ILLING.	11.		amo			-
STATI	ON:		462+32		EQUI	PMENT	:		CM	Æ 8:	50		
LOCA	TION		19' Right of Centerline										
			Raymond Taylor		HAM	MER CO	DRRECT	TION F	ACT	OR:		1.23	
	PLET		N DEPTH: 44		1	-				_			
D	S	S											
E P	Υ	M	DECODIDITION OF MATERIAL					L L	FT.	WS		%	%
Т	M B	P	DESCRIPTION OF MATERIAL	SOIL GROU	D	ے		IGH	CO	iLO.		T C	R Q
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FT.	L	E S	SURFACE ELEVATION: 1707.9		PLASTIC	LIMIT % MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
14	111	Ť	SEAMS - Highly Weathered to Weathered, Soft to		- 1	1 6		ii ii	I		H		
	11		Medium Hard, Dark Gray									90	0
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40	/-/-/-												
10			SHALE WITH OCCASSIONAL SANDSTONE										
			SEAMS - Weathered, Medium Hard, Occassional								-	100	30
_ =			Fractures, Dark Gray										
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45			Boring Terminated										
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			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.				3 NC). 14	2					
JOB N			090501 (Internal Job # D09193) Newton		-	GE TE:				nher	24, 2	2015		
JOB N			Hwy 7 Slide - Jasper				DRI	LLING:	_		w St			r-
											amo			
STAT	ION:		463 + 45		EQ	UIPM	ENT:			CN	Æ 8	50		
LOCA			18' Right of Centerline											
			Stanley Bates		HA	MME	R CO	RRECT	NOI:	FACT	OR:		1.23	
	PLET	_	N DEPTH: 35.1			_		ř	r—		r		_	
D E	s	S												
P	Y	м	DESCRIPTION OF MATERIAL		- 1				H	E.	S⊗		%	%
Т	M B	Р	DESCRIPTION OF WATERIAL	SOIL GROU	ъ I.		ē		IGH	CU	07		T C	R Q
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FT	ᅵᅵ	E S	SURFACE ELEVATION: 1699.4			PLASTIC LIMIT	% MOIST	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.		
	81	Ë	OON AGE ELEVATION: 1033.4		+	П	0		П	I				_
	17				-1									
	//		Dry, Soft, Brown Clay with Gravel											
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5	68													
		Х			1						2.			
			Moist, Soft, Brown Clay		1									
			Wolst, Soft, Brown Clay											
10	10/	∇										5		
	60%	Δ									11-	13		
			Moist, Very Stiff, Brown Clay with Gravel (Shale											
			Fragments)											
	92	a ji												
15	111	\bigvee									_2			
		\triangle									30-	52		
	11													
	11		SHALE - Highly Weathered, Medium Hard, Gray											
20		X			1						1			
					1						42-	·51		
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	11)	T			-									-
 25			SHALE - Highly Weathered, Soft to Medium Hard,									2	10d	0
25	1/2	-	Dark Gray										\dashv	_
	111													
			SHALE WITH OCCASSIONAL SANDSTONE										94	12
			SHALE WITH OCCASSIONAL SANDSTONE SEAMS - Weathered, Medium Hard, Dark Gray										34	72
30			= = = ::: Sian Sian india, baik Siay	42										
													-	
			SHALE WITH OCCASSIONAL SANDSTONE											
			SEAMS AND IRON CONCRETIONS - Slightly										100	82 l
			Weathered, Medium Hard, Dark Gray										. 39	<u> </u>
35														
REMA	ARKS	3:											_	

			HWY. & TRANS. DEPARTMENT DIVISION - GEOTECHNICAL SEC.		BORING PAGE	G NC		2				
JOB N			090501 (Internal Job # D09193) Newton		DATE:	_		ptember				
JOB N	AME:		Hwy 7 Slide - Jasper		TYPE OI	DRI	LLING:					r-
STATI	ON:		463 + 45		EQUIPM	ENT.			amor Æ85		ore	
LOCA			18' Right of Centerline		LQUII M	Livi.		C.	AL 0.	,,,		
		Y: 5	Stanley Bates		НАММЕ	R CO	RRECT	ION FACT	OR:	1	.23	
	PLET	_	N DEPTH: 35.1	·	_	1	1		r		_	
D E	S Y	S A										
E P	Y M	M	DESCRIPTION OF MATERIAL	SOIL				HT J.FT	SW(% T	% R
T H	В	P L		GROU	P 2	ST		EIGI R CU	BLC	ż	C R	Q D
	0 L	Е			PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	K	ן ע
FT.	_	S	SURFACE ELEVATION: 1699.4		5.2	%	55	PR EX	ž	PE		_
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REMA	ARK	3:										

JOB NO. 090501 (Internal Job # D09218) Newton County JOB NAME: Hwy 7 Slide Section 18, L.M. 11.73 STATION: 448+29 LOCATION: 15' Left of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 47.9 D S A Y M M P M M P M M P DESCRIPTION OF MATERIAL D B C S A M M P M M P DESCRIPTION OF MATERIAL SOIL GROUP D E E GUIPMENT: CME 850 LLE SOIL GROUP D E E GROUP D E GROUP D E GROUP D E E GROUP D E GROUP D E GROUP D E E GROUP D E GRO		HWY. & TRANS. DEPARTMENT S DIVISION - GEOTECHNICAL SEC.		BORIN PAGE							
JOB NAME: Hwy 7 Slide Section 18, L.M. 11.73 STATION: 448+29 LOCATION: 15' Left of Centerline LOGGED BY: Paul Christenberry DESCRIPTION OF MATERIAL T M P DESCRIPTION OF MATERIAL T L S SURFACE ELEVATION: 1814.7 Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel			atv.	_		Of		11.26	201	5	
Section 18, L.M. 11.73 448-29 EQUIPMENT: CME 850 LOCATION: 15' Left of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 47.9 DESCRIPTION OF MATERIAL H B O L E S SURFACE ELEVATION: 1814.7 Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel		· · · · · · · · · · · · · · · · · · ·	ity		E DDI	LLING		11 20	, 201	5	
STATION:	JOD MANAID.							r - D	iamo	nd Co	re
LOCATION: 15' Left of Centerline LOGGED BY: Paul Christenberry COMPLETION DEPTH: 47.9 DESCRIPTION OF MATERIAL P M M P DESCRIPTION OF MATERIAL SOIL GROUP T H B L E S SURFACE ELEVATION: 1814.7 Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel 10 Moist, Medium Dense, Dark Brown Sand with Some Gravel	STATION:						iugo.				10
LOGGED BY: Paul Christenberry COMPLETION DEPTH: 47.9 DESCRIPTION OF MATERIAL BY A M P P				LQUIII	11111			011		Ü	
COMPLETION DEPTH: 47.9 D S S A A P M M DESCRIPTION OF MATERIAL T H O L S SURFACE ELEVATION: 1814.7 Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Very Dense, Dark Brown Sand with Some Gravel 10 Moist, Wery Dense, Dark Brown Sand with Some Gravel				HAMM	ER CC	RRECT	'ION	FACT	OR:	1.	23
E P M M P DESCRIPTION OF MATERIAL H D L E S SURFACE ELEVATION: 1814.7 Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel											
Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel 15 Moist, Medium Dense, Dark Brown Sand with Some Gravel	E P M B L	DESCRIPTION OF MATERIAL		- 1≌	IST.	0,1	WEIGHT	ER CU.FT.	F BLOWS	12	R C Q
Moist, Very Dense, Dark Brown Sand Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel 15 Moist, Medium Dense, Dark Brown Sand with Some Gravel		I		AS	MC	DO EM	7	3S F	0.0	3R 6	
Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel	FI. 5	SURFACE ELEVATION: 1814./			%	33			Ž		-
Moist, Very Dense, Dark Brown Sand with Some Organic Matter Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Very Dense, Dark Brown Sand with Some Gravel Moist, Medium Dense, Dark Brown Sand with Some Gravel		Moist, Very Dense, Dark Brown Sand							0.4		
Moist, Very Dense, Dark Brown Sand with Some Gravel 15 Moist, Medium Dense, Dark Brown Sand with Some Gravel 20 1 1											
Moist, Medium Dense, Dark Brown Sand with Some Gravel	10										
	15								Table 1		
Moist, Loose, Dark Brown Sand with Some Clay	20	Moist, Loose, Dark Brown Sand with Some Clay								3	
Wet, Very Loose, Dark Brown Sand with Some Clay	25										
30 SANDSTONE - Weathered, Cemented, Calcareous, Light Gray	30									10	88 00
35 LIMESTONE - Slightly Weathered, Moderately	35	LIMESTONE - Slightly Weathered, Moderately									
REMARKS: * 22 hour water level elevation was 1808.2 feet				***	*						

DOB NO. 0.00501 (Internal Job # D09218) Newton County DATE April 26, 2016 TYPE OF PRILLING: Hollow Stem Auger - Diamond Core EQUIPMENT: CME 850								NO 2	. 15	2					
STATION: 448+29					tv			_			1 26	201	6		_
Section 18, L.M. 11.73 Hollow Stem Auger - Diamond Core EQUIPMENT: CME 850				,	'			RII		-	120	, 201			
STATION: 448429				· · · · · · · · · · · · · · · · · · ·											
LOGGED BY: Paul Christenberry RAMMER CORRECTION FACTOR: 1.23	STAT	ION:								Ū					
D S S A DESCRIPTION OF MATERIAL SOIL GROUP Hard, Sandy, Gray SHALE - Highly Weathered, Soft to Medium Hard, Dark Gray Shale PARTINOS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Shale Partinos and Seams - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Shale Partinos and Seams - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Shale Partinos and Seams - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Shale Partinos and Seams - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Shale Partinos and Seams - Weathered, Cemented, Light Gray Boring Terminated Soil Gray Soil Gra	LOCA	TION	:	15' Left of Centerline											
DE S S A DESCRIPTION OF MATERIAL SOIL GROUP	-					HAM	MER	CO	RRECT	ION F	ACT	OR:		1.23	
S	COM	PLET	$\overline{}$	N DEPTH: 47.9			_								
The content of the	D	s													
The content of the	Þ									يا	£	SA			%
Hard, Sandy, Gray SHALE - Highly Weathered to Weathered, Soft to Medium Hard, Dark Gray SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Borling Terminated 60 60 65 65	+			DESCRIPTION OF MATERIAL						GH	CG	19			
Hard, Sandy, Gray SHALE - Highly Weathered to Weathered, Soft to Medium Hard, Dark Gray SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Borling Terminated 60 60 65 65	Н				GROU.			IST	۵.,	WEI	ER	FB	Ä		
Hard, Sandy, Gray SHALE - Highly Weathered to Weathered, Soft to Medium Hard, Dark Gray SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Borling Terminated 60 60 65 65				OLIDEAGE ELEVATION: 4044.7		LAS		W	IQU)	RY	BS P	0.0	ER 6		
SHALE - Highly Weathered to Weathered, Soft to Medium Hard, Dark Gray SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 50 60 65 70	FIE	11111	<u> </u>	Hard Sandy Gray	-	╀╾		%_	33	Q_	_=	Ż	<u> </u>	04	66
45 SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60		斑蛀		riaid, Caridy, Cray										94	φo
45 SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60															
A5 SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60															
A5 SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60															
SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60 65 70	40													96	۸
SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 50 60 65 65 70				Medium Hard, Dark Gray											U
SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 50 60 65 65 70															
SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 50 60 65 65 70			+												
SHALE - Highly Weathered, Soft, Gray SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 50 60 65 65 70															
SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60 65 70	45			SHALE - Highly Weathered, Soft, Gray										100	32
PARTINGS AND SEAMS - Weathered, Cemented, Light Gray Boring Terminated 60 65 70															52
50 Boring Terminated	=======================================	-: :: ::		PARTINGS AND SEAMS - Weathered,											
55 55 60 65 70		rada:				╁	+	\dashv			\dashv			\dashv	
55 				Boring Terminated											
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NEIVIANNO. ZZ NOUF WATER IEVEL ELEVATION WAS 1808,Z TEET		ARKS	S: *	22 hour water level elevation was 1808.2 feet											

			HWY. & TRANS. DEPARTMENT		BORIN								
	_	_	DIVISION - GEOTECHNICAL SEC.	.4. /	PAGE	1	OI	7 <u>2</u>	:1.07	201	-		
JOB N			090501 (Internal Job # D09218) Newton Cour Hwy 7 Slide	ity	DATE: TYPE (F DRI	LLING	_	11 2 /	, 201	U		
	***************************************		Section 18, L.M. 11.73				tem A		r - D	iamo	nd C	ore	
STAT	ION:		448+31		EQUIP					Æ 85			
LOCA			7' Right of Centerline										
			Paul Christenberry		HAMM	ER CC	RRECT	ION :	FACT	OR:	1	.23	
	IPLET		N DEPTH: 58.2	r -	_	_	_	T			_	_	
D E P T H	S Y M B	SAMPLE	DESCRIPTION OF MATERIAL	SOIL GROU	PLASTIC	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	ا نِر	% T C R	% R Q D
FT.	L	S	SURFACE ELEVATION: 1814.7		PL/	1%	LI CI	DR	LB	NO NO	PEI		
5		X	Moist, Medium Dense, Dark Brown Clayey Sand with Some Organics							3 10-	11		
10		×	Moist, Very Dense, Dark Brown Sand							60 (5) ")		
		X	Moist, Medium Dense, Dark Brown Clayey Sand with Organic Matter							8-1	11		
20		X	Moist, Medium Dense, Sand with Some Clay							6-			
		X	Moist, Very Loose, Dark Brown Clayey Sand							1-1-	2		
			SANDSTONE - Weathered, Cemented, Gray								ļ	100	80
30			SANDSTONE - Highly Weathered, Poorly Cemented, Brown								1	100	60
REM	ARK	S:											

ARKANSAS HWY. & TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC.						3 NC). 16 OF	2					
JOB N			090501 (Internal Job # D09218) Newton Cour	nty	PAGE DATE:	_		April	27	, 201	6		
JOB N	AME:		Hwy 7 Slide		TYPE OI	DRI	LLING:	-					
			Section 18, L.M. 11.73		Hollow Stem Auger - Diamond Core							Core	
STAT			448+31		EQUIPM	ENT:			CM	Æ 8:	50		
LOCA			7' Right of Centerline Paul Christenberry		HAMME	P CO	DDECT	ION E	А С Т	OD.		1.23	
			N DEPTH: 58.2		HAMME	K CO	KKECI	TONTA	AC I	OK:		1,23	
D		s											
ΙE	S Y	Α							ائے	70			0.4
P T	м	M P	DESCRIPTION OF MATERIAL	SOIL				Ħ	U.F.	OW:		% T	% R
h	В	L		GROU	P 2	ST.		ÆIG	R.C	BL	ż	c	Q
	O L	Ε			PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	R	D
FT.	_	S	SURFACE ELEVATION: 1814.7		7.17	%	HH	DR	TB	0N	PE		
			and the second s									58	10
	//		_Moist, Soft, Light Gray Clay										
		1											
<u> </u>													
40			SHALE - Weathered, Medium Hard, Gray									٥	
												100	68
		-										-	_
45													
,,,												98	72
													-
	EEE												
	-	T											
50			SANDSTONE WITH FREQUENT SHALE										
			PARTINGS AND SEAMS - Slightly Weathered,									98	98
			Cemented, Slightly Calcareous, Light Gray										
			5°										
55													
												100	82
			SHALE WITH OCCASIONAL SANDSTONE										
		\perp	PARTINGS - Slightly Weathered, Medium Hard,		-				-	_	_	\dashv	-
60			Gray										
			Boring Terminated										
65													
70 DEM	V DIV												\dashv
REMA	~ITINC) .											

			HWY. & TRANS. DEPARTMENT				0. 17						
JOB N	_	LO	DIVISION - GEOTECHNICAL SEC. 090501 (Internal Job # D09218) Newton Cour	ntv	PAG	_	l OI	₹ 2	11 20	201	6		
JOB NO. 090501 (Internal Job # D09218) Newton County DATE: April 28, 2016 JOB NAME: Hwy 7 Slide TYPE OF DRILLING:													
JOBI	12 KIVILD.		Section 18, L.M. 11.73				Stem A		r - D	iamo	nd (Core	
STAT	ION:		449+03			PMEN7				ΛE 8:			
LOCA			7' Right of Centerline										
			Steve Faulkner		HAM	MER C	ORREC'	TION	FACT	OR:		1.23	
	PLET		N DEPTH: 58.3		_	_	T	_		r		_	
D E P	S Y M	S A M	DESCRIPTION OF MATERIAL	SOIL				IT	J.FT.	SM		% T	% R
H	ВО	P L E		GROU	-1≌	LIMIT % MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	C R	Q D
FT.	L	S	SURFACE ELEVATION: 1810.4		PL/	LIMIT % MOI	N N	DR	LB	NO NO	PEI		
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		ASPHALT										
	7		BASE										
5 		X								2-			
			Moist, Soft, Brown Sandy Clay with Some Gravel (Rock Fragments)										
10	4	X								1-1-	2		
			Moist, Soft, Brown Sandy Clay with Cobbles and Boulders										
	5 . 0 20 9 5 . 0 . 6 5 . 0 . 6	\times	Moist, Very Dense, Brown Gravel (Sandstone Fragments) with Sand							- 14 - 60 (4)	0		
			Moist, Hard, Reddish Brown Sandy Clay							,	,		
	00 6		Gravel and Cobbles (Rock Fragments)							_			
20		X	Moist, Hard, Reddish Brown Sandy Clay with Gravel (Rock Fragments)							19-			
25		X	Wet, Loose, Reddish Brown Clayey Sand*							4-			
 30		X	SHALE - Highly Weathered, Medium Hard, Gray SANDSTONE - Weathered with Highly							25 60 (3)) ")		
35			Weathered Layers, Cemented with Poorly Cemented Layers, Gray to Brown LIMESTONE - Weathered with Highly Weathered Layers, Moderately Hard, Gray							(0	')	100	65
REM	ARKS	S: *	Hit Water Stratum at 25.0 feet below ground level.										

). 17	. 2					
JOB N			090501 (Internal Job # D09218) Newton Cour	nty	PAGE DATE:	2		Apri	il 28	, 201	6		
JOB N	AME:		Hwy 7 Slide		TYPE O								
l			Section 18, L.M. 11.73				tem A	uger				Core	
STAT			449+03 7' Right of Centerline		EQUIPMENT: CME 850								
			Steve Faulkner		HAMMI	R CC	RRECT	TION I	ACT	OR:		1.23	
-			N DEPTH: 58.3	•									
D E P T H	SY⊠BO∟	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 1810.4	SOIL GROU	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.	% T C R	% R Q D
- 2		Ť	GON ACE ELEVATION: 1010.4	-		-							
			CLIALE Weethand Madicus Hand Dayle Curre									88	72
40			SHALE - Weathered, Medium Hard, Dark Gray									99	80
45 — -			SANDSTONE WITH FREQUENT SHALE PARTINGS AND SEAMS - Slightly Weathered,									100	58
50			Cemented, Gray									100	89
55 			SHALE WITH FREQUENT SANDSTONE PARTINGS AND SEAMS - Slightly Weathered, Medium Hard, Dark Gray									100	74
			Boring Terminated										
60													
65													
— –													
<u> </u>													
70													
	ARKS	3: *	Hit Water Stratum at 25.0 feet below ground level.										

ARKANSAS HWY. & TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC.). 18	- 0						
						1		2	5/1.	201	_		_	
			·	ity	DATE:			-	' 5th	, 201	0			
JOB N	AME:		Hwy 7 Slide		TYPE OF DRILLING: Hollow Stem Auger - Diamond Core									
OTT A TE	(ON)		Section 18, L.M. 11.73		Hollow Stem Auger - Diamond Core									
STAT			449+02 15' Left of Centerline		EQUIPMENT: CME 850									
LOCA			Paul Campbell		HAMMI	7D CC	DDECT	TION I	EACT	'nρ.		1.23		
			N DEPTH: 43.5		HAMM	SR CC	RRECI	ION	ACI	OK:		1.23	$\overline{}$	
D		S	\ DEI 111. 43.3									П	_	
E	S Y	A							. 10					
Р	M	М	DESCRIPTION OF MATERIAL	SOIL				Ħ	J.F.I	W.S		% T	% R	
▎▁▏▏	В	Р		GROU	P .	<u> </u>		151	CC	BLC	;	l c l	Q	
Н	0	E			ĬĬ.	OIS	E L	W	PEF	OF.	(I-9	R	D	
FT:	L	S	SURFACE ELEVATION: 1811.2		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.			
-	1 (1 1 1 1	_	CONTACE ELEVATION: 1011.2		 <u> </u> 	+ <u>^</u>	111		\dashv			Н	_	
			19											
— -		ė.	Asphalt and Sand with Some Organic Matter											
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		/_\	Maint Madium Dance Proug Cond with Come								,			
			Moist, Medium Dense, Brown Sand with Some Gravel											
			Graver											
10		\vee								6				
		\triangle								4-	6			
			Moist, Loose, Reddish Brown Sand											
15		\times								34				
L _										60 (10	0)")			
			Moist, Very Dense, Reddish Brown Sand							(,,	,			
20	1///	∇								2	<u> </u>			
		\triangle	Wet, Loose, Reddish Brown Clayey Sand							2-	5	Ш		
	///		Wot, 2000, Roddion Blown Glayby Gand											
		T								60 (1	0	100	400	
	斑	4								(1	")	100	100	
 25	田田													
	盟		LINATOTONIC Climbals Months and Madagatals									100	100	
	鰦		LIMESTONE - Slightly Weathered, Moderately Hard, Sandy, Light Gray											
	聯		riala, Saliay, Eight Slay											
	出出													
30														
	班											hod	74	
			Moist, Soft, Light Gray Clay											
	班		LIMESTONE - Slightly Weathered, Moderately											
			∖Hard, Sandy, Light Gray											
35														
REM	ARK	S: S	Split spoon catcher broke at approximately 15.8 feet;	poor s	ample	rec	overy							

	HWY. & TRANS. DEPARTMENT	BORIN			_							
JOB N			DIVISION - GEOTECHNICAL SEC. 090501 (Internal Job # D09218) Newton Cour)tv	PAGE DATE:	2		May 5	th '	2016		_
JOB N			Hwy 7 Slide	'ty	DATE: TYPE O	F DRI		•	ш, .	2010		
JOBIN	i tivib.		Section 18, L.M. 11.73						Dia	amond (Core	
STATI	ON:		449+02		EQUIPM			_		E 850		
LOCA			15' Left of Centerline									
-	LOGGED BY: Paul Campbell HAMMER CORRECTION FACTOR: 1.23											
	PLET	$\overline{}$	N DEPTH: 43.5			_			_		_	_
D E	S	S A										
P	Y M	М	DESCRIPTION OF MATERIAL	SOIL				TI.].r	SW(% T	% R
T	В	Р	DESCRIPTION OF WATERWAY	GROU	P o	1		EIGH	֡֟֓֓֓֓֓֓֓֓֓֓֓֓֓֟֓֓֓֓֓֟֓֓֓֓֓֟֓֓֓֓֟֓֓֓֟֟֓֓֓֟֓֓֓֟֓֓֓֟֓֓֓֓	BLC	C	Q
Н	0	L E			STI	% MOIST.		DRY WEIGHT	LBS FER CU.F1	NO. OF BLOWS PER 6-IN.	R	D
FT	L		SURFACE ELEVATION: 1811.2		PLASTIC LIMIT	W	LIQUID	DRY	[P	NO. PER		
			SANDSTONE - Unweathered, Well Cemented,					!	T		00	76
			Conglomeratic, Calcareous, Light Gray								00	70
		-		1								
40			CHALE MITH OCCASIONAL SANDSTONE									
			SHALE WITH OCCASIONAL SANDSTONE PARTINGS - Slightly Weathered, Medium Hard,								100	52
			Occasional Fractures, Gray									-
			Boring Terminated						1		П	
45									ŀ			
50												
_ =												
									-			
 55												
					1							
60												
65												
<u> </u>												
_ =												
70 RFM	ARK		Split spoon catcher broke at approximately 15.8 feet	· poor s	amnle	rec	OVED/				L_	
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